

- 10 b) line-switching transferring [transfer] of data through
11 said connection from the first switch to the access point
12 of the packet-switching network;
13 c) packeting of the data into data packets if [this does]
14 the data do not yet exist as data packets, and packet-
15 switching transferring [transfer] of the data packets
16 through the packet-switching network from the access
17 point to the second switch;
18 d) checking repeatedly [repeated checks] whether a control
19 signal exists which is triggered by [the] a user of the
20 [an] end terminal or the network management system for
21 changing-over [transferring] to a line-switching
22 connection to the second switch;
23 e) establishing the [a] line-switching connection, during an
24 existing transfer, from the first switch to the second
25 switch through the line-switching network with a [the]
26 presence of [a corresponding] the control signal, if
27 [this] the line-switching connection is not yet present;
28 f) changing-over to a line-switching data transfer during
29 the existing [connection] transfer and transferring data
30 over the line switching connection to the second switch.

1 2. (Amended) A method [Method] for transferring data from an
2 end terminal, from a first switch to a second switch both of which
3 are [both] part of a line-switching network and a packet-switching
4 network, both managed by a network management system, and have
5 access to such networks, selectively through line-switching or
6 through packet-switching, comprising [consisting of] the
7 [followings] steps of:

- 8 a) packeting the data into data packets in the first switch
9 if the data does not yet exist as data packets;

- 10 b) packet-switching transferring [transfer] of the data
11 packets through the packet-switching network to the
12 second switch;
13 c) checking repeatedly [repeated checking] whether a control
14 signal exists which is triggered [released] by a [the]
15 user of the [an] end terminal or [a] the network
16 management system for transferring to a line-switching
17 connection to the second switch;
18 d) establishing the [a] line-switching connection, during an
19 existing transfer, through the line-switching network to
20 the second switch with [the] a presence of [a
21 corresponding] the control signal, if [this] the line-
22 switching connection is not yet present;
23 e) [f)] changing-over [change] to a line-switching data
24 transfer during the existing [connection] transfer
25 and transferring data over the line switching
26 connection to the second switch.

3. (Amended) The method [Method] according to claim 1 or 2
wherein the data packets after changing over to [a] the line-
switching data transfer remain as data packets and are transferred
as such by line-switching.

4. (Amended) The method [Method] according to claim 1 or 2
wherein the data packets after changing to [a] the line-switching
data transfer are unpacketed, more particularly [the] headers of
the data packets are removed.

5. (Amended) The method [Method] according to claim 1 [at
least one of claims 1, 3 or 4] wherein a [the] same data channel is
used to send the data packets to the access point to the packet-
switching network and to transfer the data through the line-
switching network to the second switch.

1 6. (Amended) The method [Method] according to claim 1 [at
2 least one of claims 1, 3 or 4] wherein data packets are transferred
3 to the access point to the packet-switching network through a first
4 data channel and the data are transferred for line-switching to the
5 second switch through a second data channel.

1 7. (Amended) The method [Method] according to claim 1 or 2
2 [at least one of the preceding claims] wherein the line-switching
3 network is an ISDN network [with] having ISDN switches, the data
4 packets have [the format] a TCP/IP format and [the] data channels
5 used for the line-switching data transfer [represent] are ISDN B
6 channels.

1 8. (Amended) The method [Method] according to claim 1 or 2
2 [at least one of the preceding claims] wherein the control signal
3 which [releases] triggers a change-over [change] between the line-
4 switching transfer and the packet-switching transfer [on
5 understepping or exceeding certain demands on the quality of the
6 data transfer such as time delay or noise proportion,] is produced
7 automatically when demands on a quality of a data transfer such as
8 a time delay or a noise proportion is understepped or exceeded, or
9 produced as a result of a command of [a] the network management
10 system or [an] the end terminal [appliance].

1 9. (Amended) The method [Method] according to claim 1 [at
2 least one of the preceding claims] wherein, with [a] the line-
3 switching data transfer between the first switch and the second
4 switch or between the first switch and the access point to the
5 packet-switching network, the data of several users are multiplexed
6 on one data channel by forming sub-channels of a fixed bandwidth
7 [band width].

1 10. (Amended) The method [Method] according to claim 9
2 wherein the data of [one] the user [after its selection] when line-
3 switching is selected, are transferred line-switched with a
4 transfer rate which corresponds to a fraction of the transfer rate
5 of a [the] bandwidth [band width] which is available as standard to
6 the user.

1 11. (Amended) The method [Method] according to claim 9 or 10
2 wherein the line-switching [line-switched] network is an ISDN
3 network and the data of [one] the user to be transferred are
4 transferred between the first and the second switches or between
5 [one] the first switch and the access point to the packet-switching
6 network on [one] a data channel with a bandwidth [band width] which
7 [corresponds to] is only a fraction of a standard [the] bandwidth
8 [band width] of 64 kbit/s [which is available as standard], more
9 particularly 32, 16, 8, 4, 2 or 1 kbit/s.

1 12. (Amended) The method [Method] according to claim 11
2 wherein, in the first switch, only [each] every n-th byte or every
3 [each] n-th bit of an ISDN frame is copied over and forwarded on
4 [the] a [switched-through] data channel to the [next] second switch
5 or to [an] the access point to the packet-switching network,
6 whereby an effective [the] bandwidth [band width] of the line-
7 switching data transfer is [64 kbit/s /n] (64/n) kbit/s.

1 13. (Amended) The method [Method] according to Claim 1 or 2
2 [at least one of the preceding claims] wherein, with a data
3 transfer from the first switch changing over [a change-over] from
4 a packet-switching data transfer to [a] the line-switching data
5 transfer,

6 a) an [the] address information of the data packets are
7 evaluated and classified according to a network
8 topology[;], and

- 9 b) for the data packets whose destination addresses [relate]
10 correspond to [the] a same topological area of the
11 network [a] , the second switch is selected which is
12 located in [this] the same topological area[;]
13 [c] a line-switching connection (bypass) is established with
14 the selected switch, and]
15 [d] the corresponding data or data packets are transferred
16 line-switched to the switch].

1 14. (Amended) The method [Method] according to claim 13
2 wherein, [characterized in that] to classify the data packets
3 according to the network topology, the destination addresses of the
4 data packets are sorted according to geographical areas whereby,
5 for data packets whose destination addresses correspond [relate] to
6 [the] a same geographical area, [a] the second switch is selected
7 [which is] to be located in this geographical area [and a line-
8 switching connection is established with this switch].

1 15. (Amended) The method [Method] according to claim 14
2 [characterized in that] wherein, for classifying the data packets
3 according to geography, the destination addresses are compared with
4 destination addresses stored in a data bank [whereby the data band]
5 which contains a link between the destination addresses and [the]
6 associated [geographic situation] geographical areas.

1 16. (Amended) [Method according to at least one of the
2 preceding claims wherein in corresponding manner during an existing
3 connection a change is made between a line-switching and a packet-
4 switching transfer.] The method according to claim 1, when the data
5 is being transferred using the line-switching data transfer,
6 further comprising the steps of:

- 7 a) checking repeatedly whether a second control signal
8 exists which is triggered by the user of the end terminal or

9 the network management system for changing-over to a packet-
10 switching data transfer to the second switch;

11 b) establishing a second connection through the line-
12 switching network, during the existing transfer, from the
13 first switch to the access point of the packet-switching
14 network with a presence of the second control signal, if the
15 connection to the access point is no longer present;

16 c) changing-over to a packet-switching data transfer
17 during the existing transfer;

18 d) line-switching transferring of the data through the
19 connection or the second connection from the first switch to
20 the access point; and

21 e) packeting of the data into data packets if the data
22 does not yet exist as data packets, and packet-switching
23 transferring of the data packets through the packet switching
24 network from the access point to the second switch.

17. (Amended) A switch [Switch] for use in a method according
to claim [claims] 1 or 2, [with] comprising: a control device; at
least one packeting device [(713, 714)] for packeting and
unpacking data[,]; a packet switching device [(72)] for routing
data packets; and a line-switching device [(73)] for establishing
connections of data channels, [characterized by] wherein [a] the
control device [(71) which] directs incoming data either to the
packet switching device [(72)] or to the line switching device
[(73)] depending [in dependence] on the control [signals] signal
[of a] triggered by the user of [an] the end terminal or the [a]
network management system.

18. (Amended) The switch [Switch] according to claim 17
[characterized in that] further comprising a topology data bank
[(75) is provided_which contains] containing associations between

4 destination addresses of the data packets and associated
5 geographical areas [origin].

1 19. (Amended) The switch [Switch] according to claim 17 [or
2 18] further comprising [characterized in that furthermore] a
3 multiplexer [(732) is provided] which, with the presence of a
4 corresponding control command, multiplexes several data streams so
5 that only [each] every n-th bit and/or [each] every n-th byte is
6 used in [the] an outgoing data channel.

1 20. (Amended) The switch [Switch] according to claim 19
2 [characterized in that] wherein different input data streams occupy
3 different sized proportions in the outgoing data channel.

1 21. (Amended) The switch [Switch] according to claim 17
2 further comprising [one of claims 17 to 20 characterized in that in
3 addition] a device [(721) is provided] for compressing and
4 decompressing data.

5 [Please add the following new claims:]

1 -- 22. The method according to claim 2 wherein, with the line-
2 switching data transfer between the first switch and the second
3 switch, the data of several users are multiplexed on one data
4 channel by forming sub-channels of a fixed bandwidth. --

1 -- 23. The method according to claim 22 wherein the data of the
2 user when line-switching is selected, are transferred line-switched
3 with a transfer rate which corresponds to a fraction of the
4 transfer rate of a bandwidth which is available as standard to the
5 user. --

1 -- 24. The method according to claim 22 or 23 wherein the line-
2 switching network is an ISDN network and the data of the user to be
3 transferred are transferred between the first and the second
4 switches on a data channel with a bandwidth which is only a
5 fraction of a standard bandwidth of 64 kbit/s, more particularly
6 32, 16, 8, 4, 2 or 1 kbit/s. --

1 -- 25. The method according to claim 24 wherein, in the first
2 switch, only every n-th byte or every n-th bit of an ISDN frame is
3 copied over and forwarded on a data channel to the second switch,
4 whereby an effective bandwidth of the line-switching data transfer
5 is $(64/n)$ kbit/s. --

1 -- 26. The method according to claim 2, when the data is being
2 transferred using the line-switching data transfer, further
3 comprising the steps of:

4 a) checking repeatedly whether a second control signal
5 exists which is triggered by the user of the end terminal or the
6 network management system for changing-over to a packet-switching
7 data transfer to the second switch;

8 b) changing-over to a packet-switching data transfer
9 during the existing transfer with a presence of the second control
10 signal; and

11 c) packeting the data into data packets in the first
12 switch if the data does not yet exist as data packets, and packet-
13 switching transferring of the data packets through the packet-
14 switching network to the second switch. --

1 -- 27. A switch comprising:

2 a control device;

3 at least one packeting device for packeting and
4 unpacketing data;

5 a packet switching device for routing data packets; and